FIG. 1

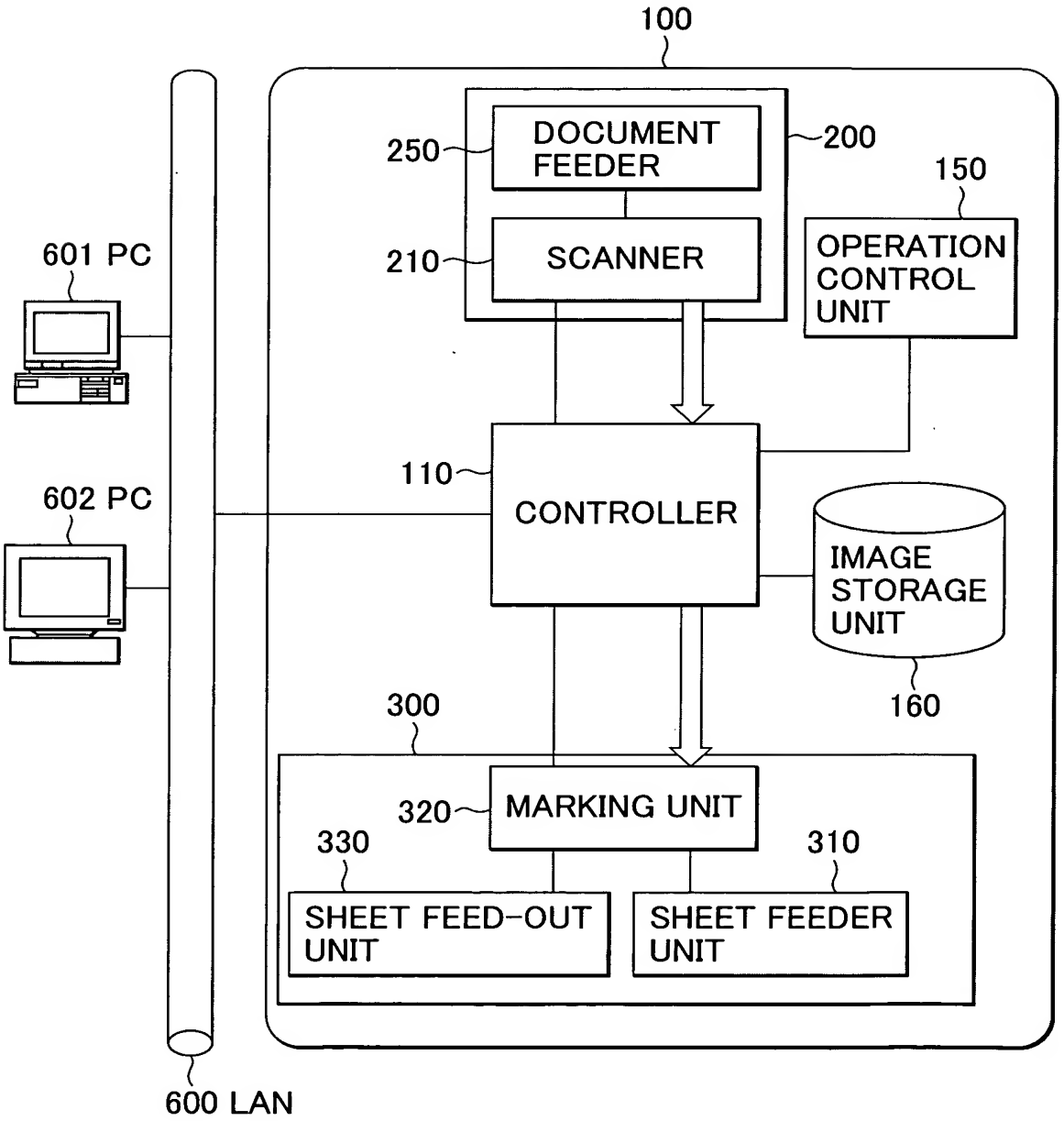

100
DOCUMENT FEEDER
250
200
150
SCANNER
210
OPERATION CONTROL UNIT
601 PC
602 PC
110
CONTROLLER
IMAGE STORAGE UNIT
160
300
320
MARKING UNIT
330
310
SHEET FEED-OUT UNIT
SHEET FEEDER UNIT
600 LAN

FIG. 2

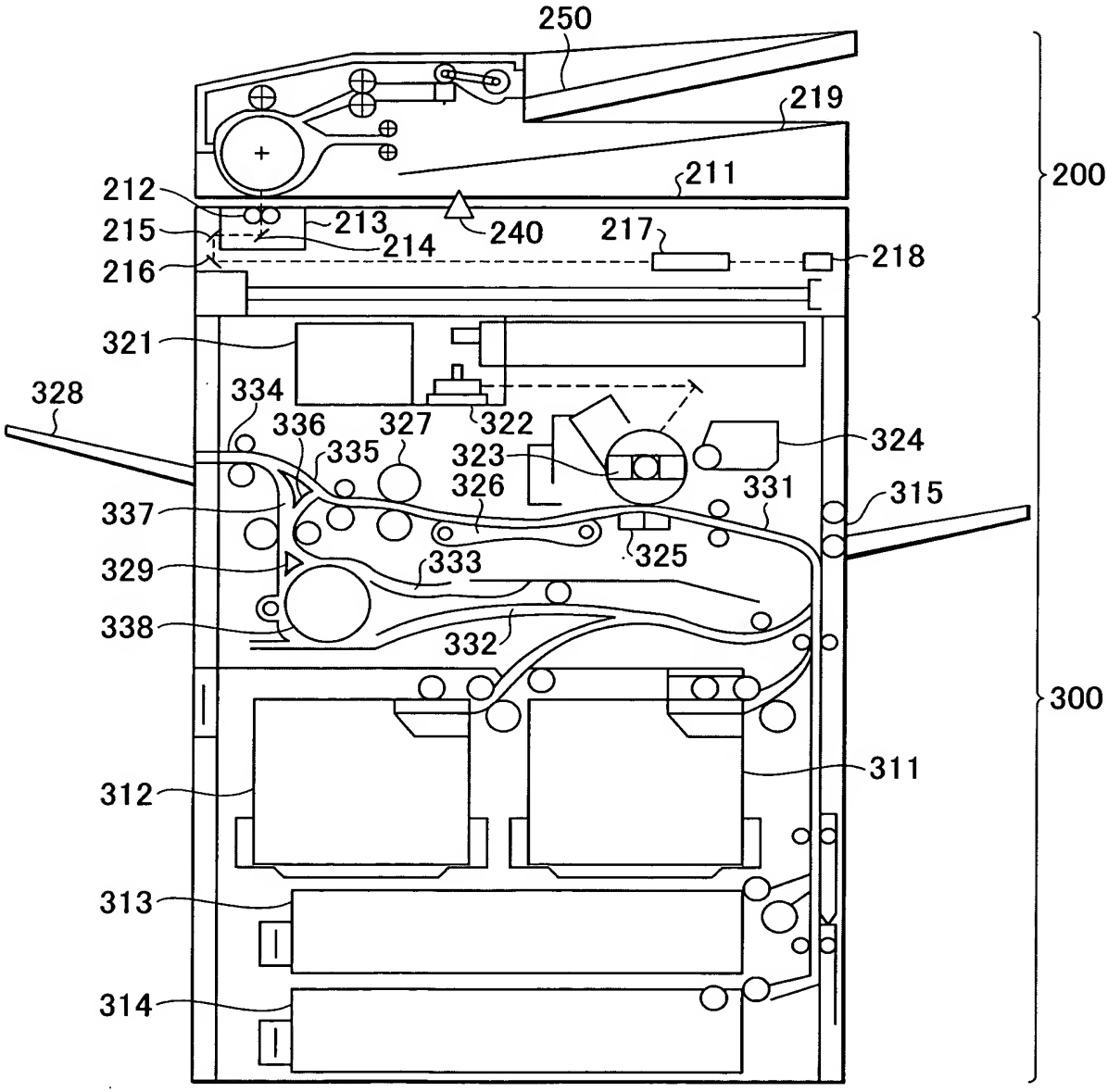

250
219
211
200
212
215
216
213
214
240
217
218
321
328
334
336
327
322
335
323
326
324
331
315
337
329
333
325
338
332
300
312
311
313
314

FIG. 3

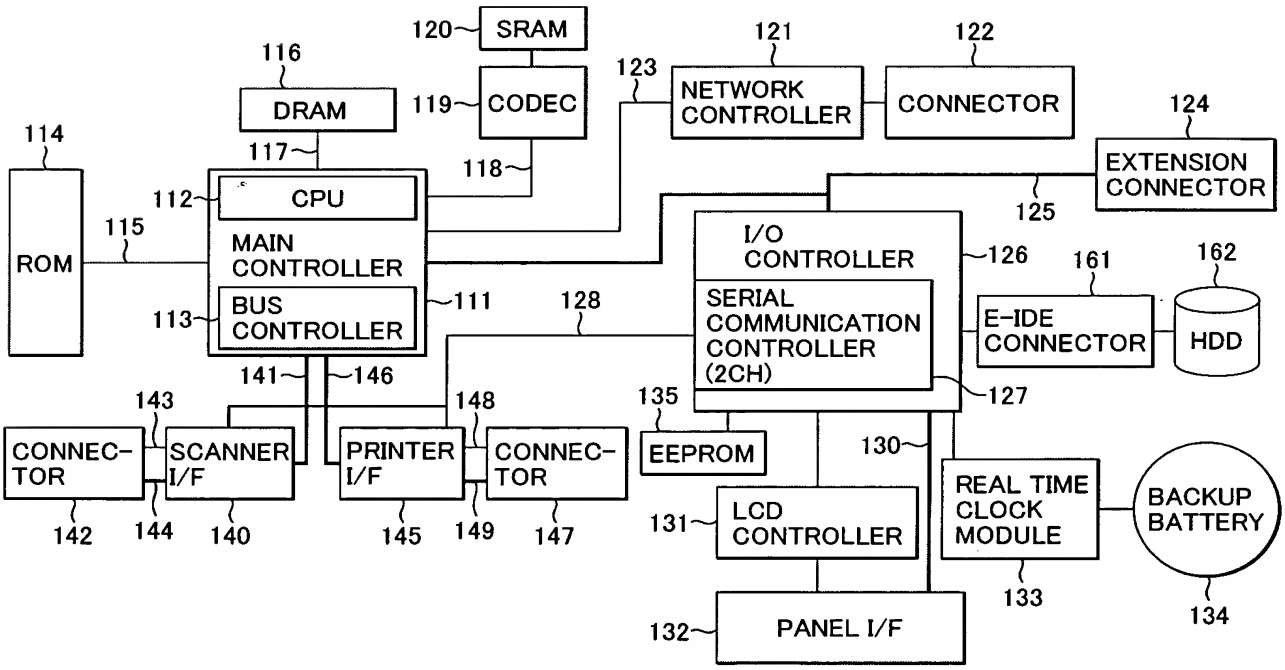

120
SRAM
116
DRAM
119
CODEC
121
NETWORK CONTROLLER
122
CONNECTOR
123
124
EXTENSION CONNECTOR
114
ROM
117
118
112
CPU
115
MAIN CONTROLLER
113
BUS CONTROLLER
111
125
I/O CONTROLLER
126
161
162
128
SERIAL COMMUNICATION CONTROLLER (2CH)
E-IDE CONNECTOR
HDD
127
141
146
143
148
135
CONNEC-TOR
SCANNER I/F
PRINTER I/F
CONNEC-TOR
EEPROM
130
REAL TIME CLOCK MODULE
BACKUP BATTERY
131
LCD CONTROLLER
142
144
140
145
149
147
133
134
132
PANEL I/F

FIG. 4

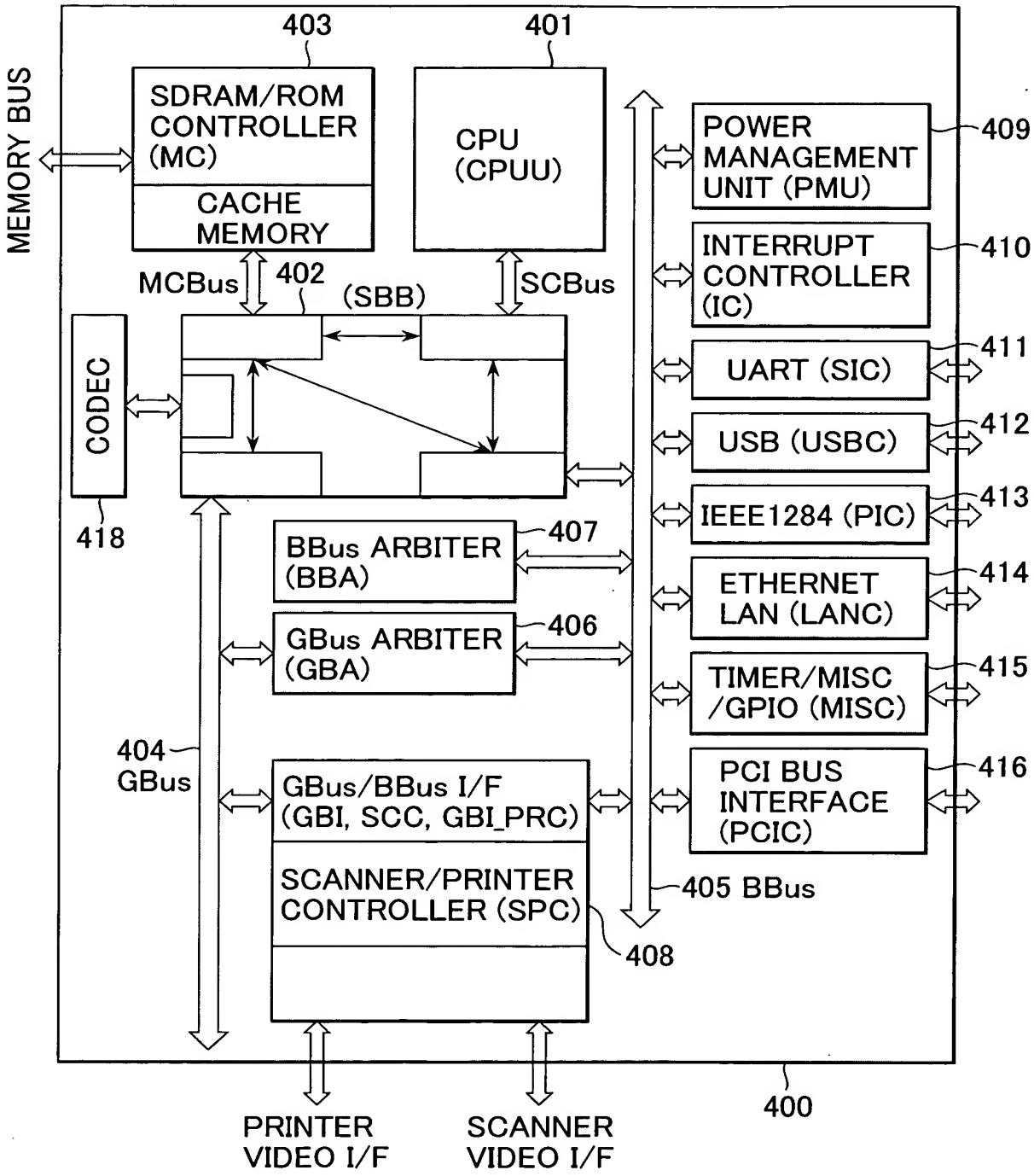

MEMORY BUS
403
SDRAM/ROM CONTROLLER (MC)
CACHE MEMORY
401
CPU (CPUU)
MCBus
402
(SBB)
SCBus
CODEC
418
BBus ARBITER (BBA)
407
GBus ARBITER (GBA)
406
404 GBus
GBus/BBus I/F (GBI, SCC, GBI_PRC)
SCANNER/PRINTER CONTROLLER (SPC)
408
405 BBus
POWER MANAGEMENT UNIT (PMU)
409
INTERRUPT CONTROLLER (IC)
410
UART (SIC)
411
USB (USBC)
412
IEEE1284 (PIC)
413
ETHERNET LAN (LANC)
414
TIMER/MISC /GPIO (MISC)
415
PCI BUS INTERFACE (PCIC)
416
400
PRINTER VIDEO I/F
SCANNER VIDEO I/F

FIG. 5

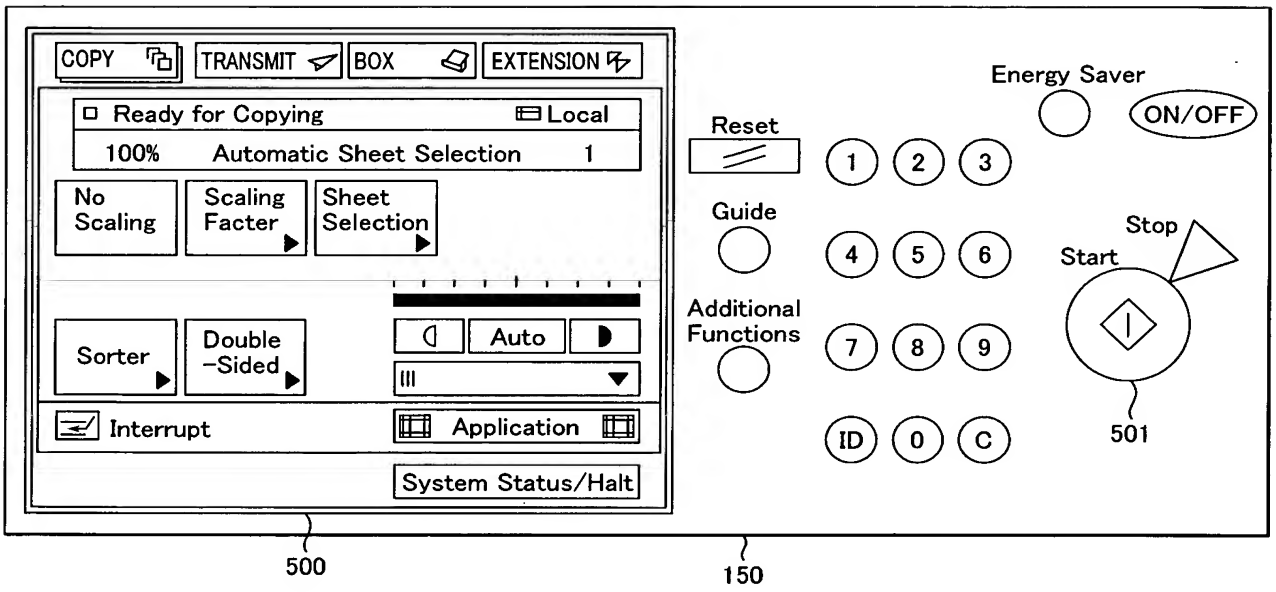

COPY
TRANSMIT
BOX
EXTENSION
Ready for Copying
Local
100%
Automatic Sheet Selection
1
No Scaling
Scaling Facter
Sheet Selection
Sorter
Double -Sided
Auto
Interrupt
Application
System Status/Halt
Reset
Guide
Additional Functions
1
2
3
4
5
6
7
8
9
ID
0
C
Energy Saver
ON/OFF
Stop
Start
501
500
150

FIG. 6

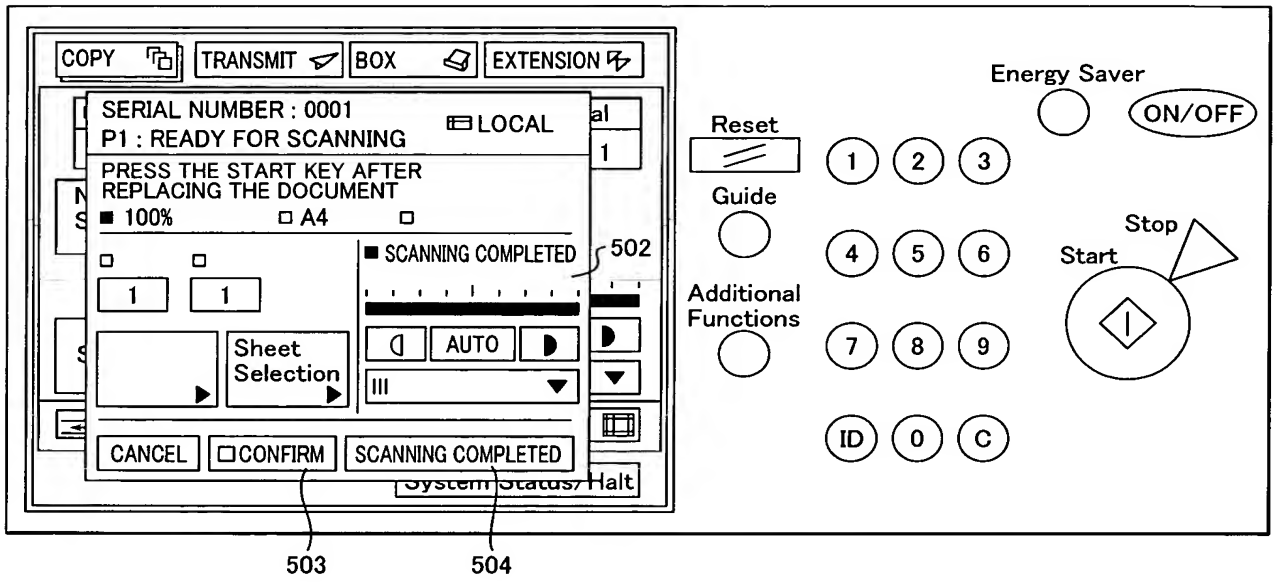

COPY
TRANSMIT
BOX
EXTENSION
SERIAL NUMBER : 0001
P1 : READY FOR SCANNING
LOCAL
PRESS THE START KEY AFTER
REPLACING THE DOCUMENT
100%
A4
SCANNING COMPLETED
502
1
1
Sheet
Selection
AUTO
III
CANCEL
CONFIRM
SCANNING COMPLETED
503
504
Reset
Guide
Additional
Functions
Energy Saver
ON/OFF
1
2
3
4
5
6
7
8
9
ID
0
C
Stop
Start

FIG. 7

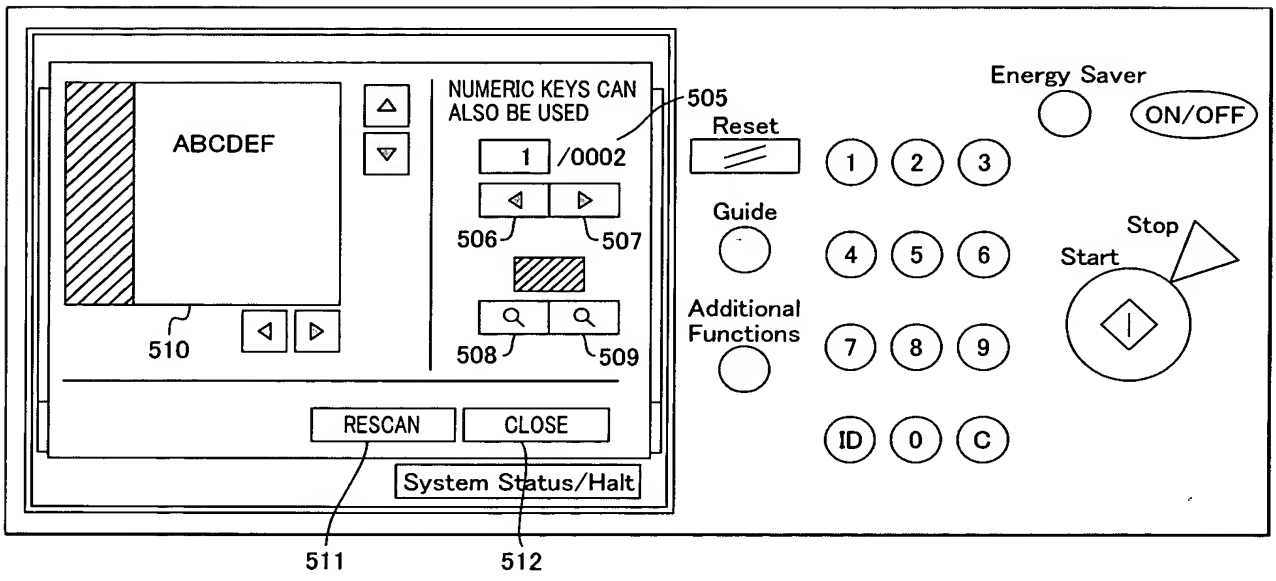

ABCDEF
NUMERIC KEYS CAN ALSO BE USED
505
1
/0002
506
507
508
509
510
RESCAN
CLOSE
System Status/Halt
511
512
Reset
Guide
Additional Functions
Energy Saver
ON/OFF
Stop
Start
1
2
3
4
5
6
7
8
9
ID
0
C

FIG. 8

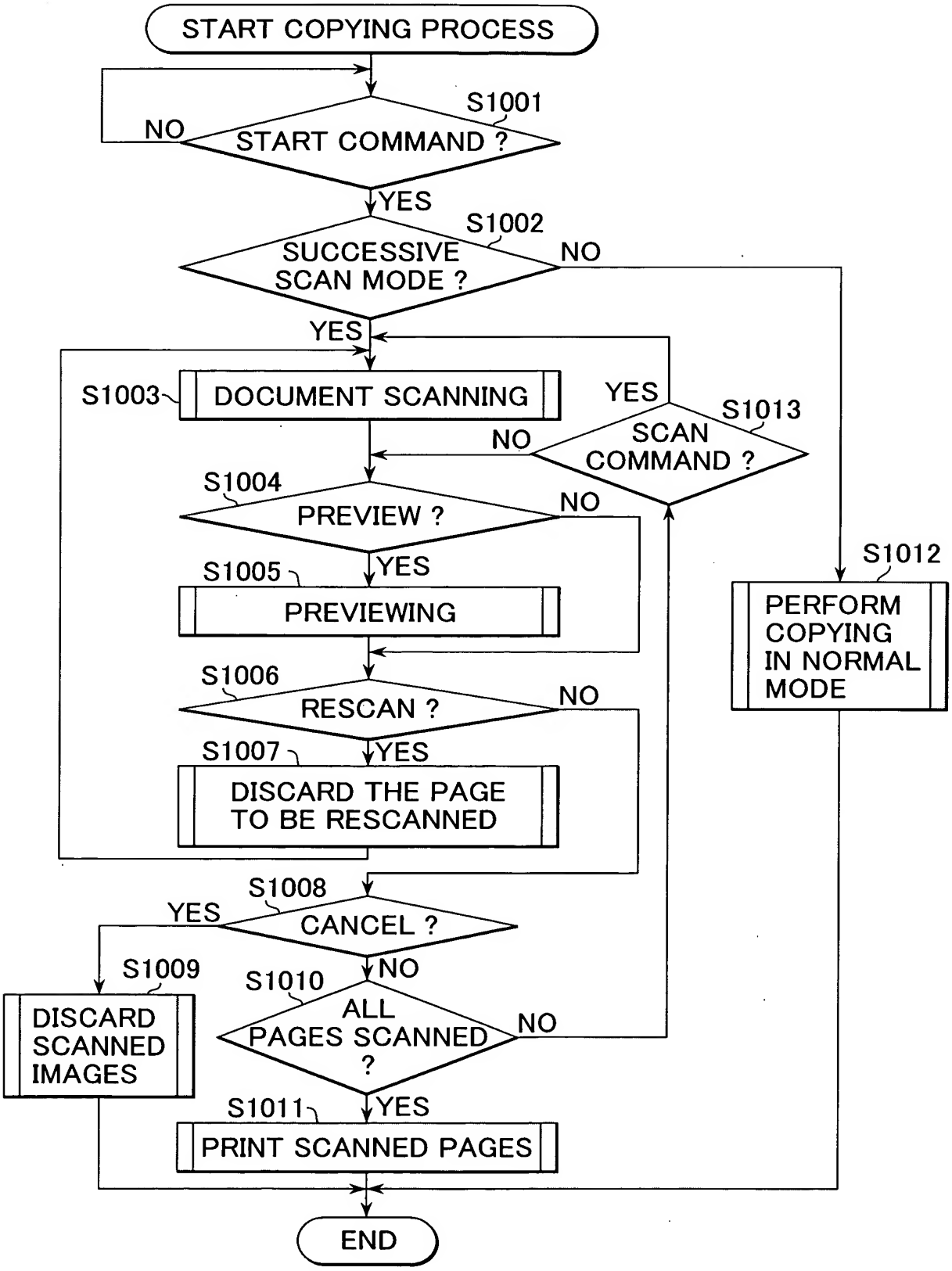

START COPYING PROCESS
S1001
START COMMAND ?
NO
YES
S1002
SUCCESSIVE SCAN MODE ?
NO
YES
S1003
DOCUMENT SCANNING
YES
S1013
SCAN COMMAND ?
NO
S1004
PREVIEW ?
NO
YES
S1005
PREVIEWING
S1006
RESCAN ?
NO
YES
S1007
DISCARD THE PAGE TO BE RESCANNED
S1008
CANCEL ?
YES
NO
S1009
DISCARD SCANNED IMAGES
S1010
ALL PAGES SCANNED ?
NO
YES
S1011
PRINT SCANNED PAGES
S1012
PERFORM COPYING IN NORMAL MODE
END

FIG. 9

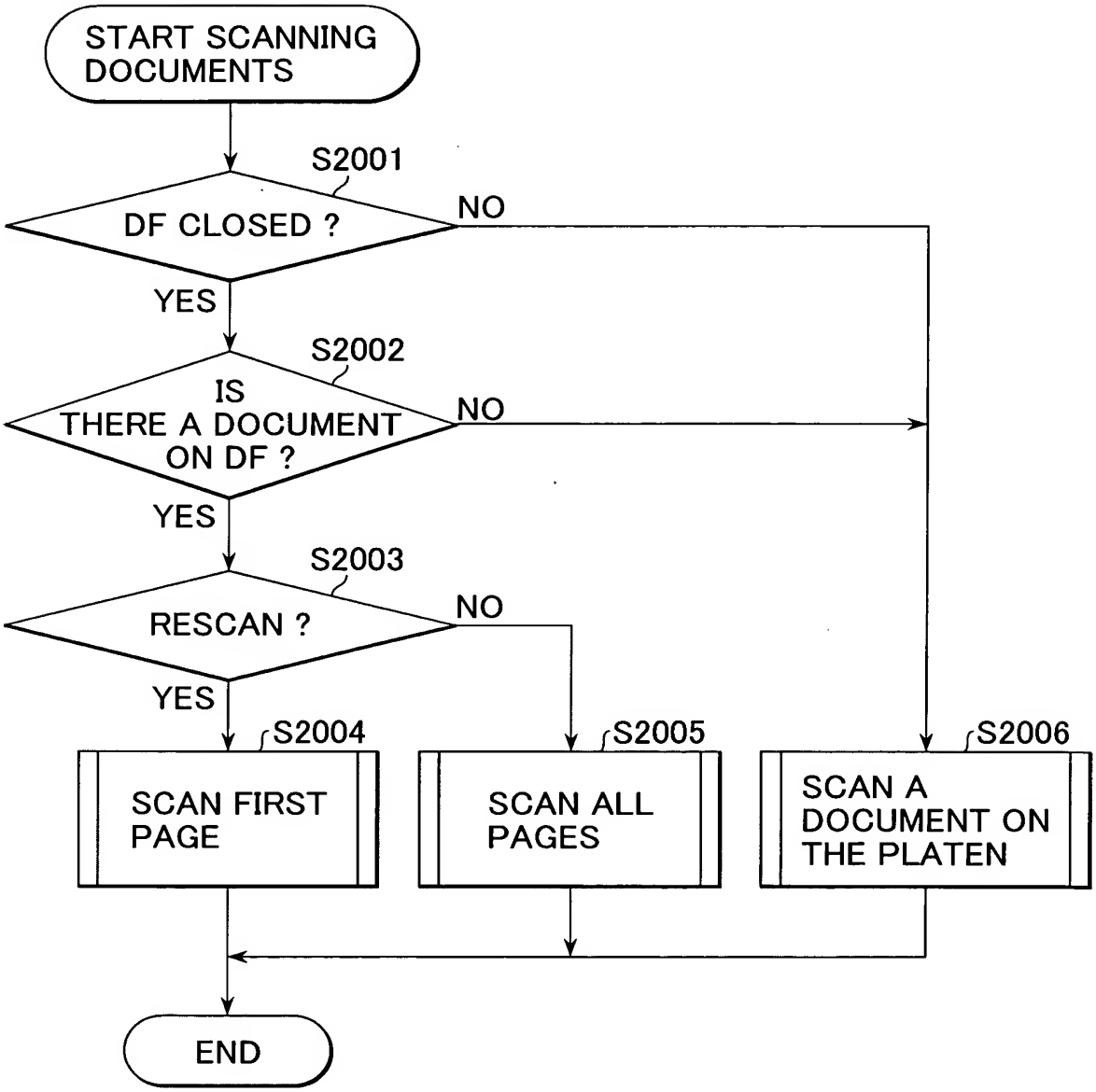

START SCANNING DOCUMENTS
S2001
DF CLOSED ?
NO
YES
S2002
IS THERE A DOCUMENT ON DF ?
NO
YES
S2003
RESCAN ?
NO
YES
S2004
SCAN FIRST PAGE
S2005
SCAN ALL PAGES
S2006
SCAN A DOCUMENT ON THE PLATEN
END

FIG. 10

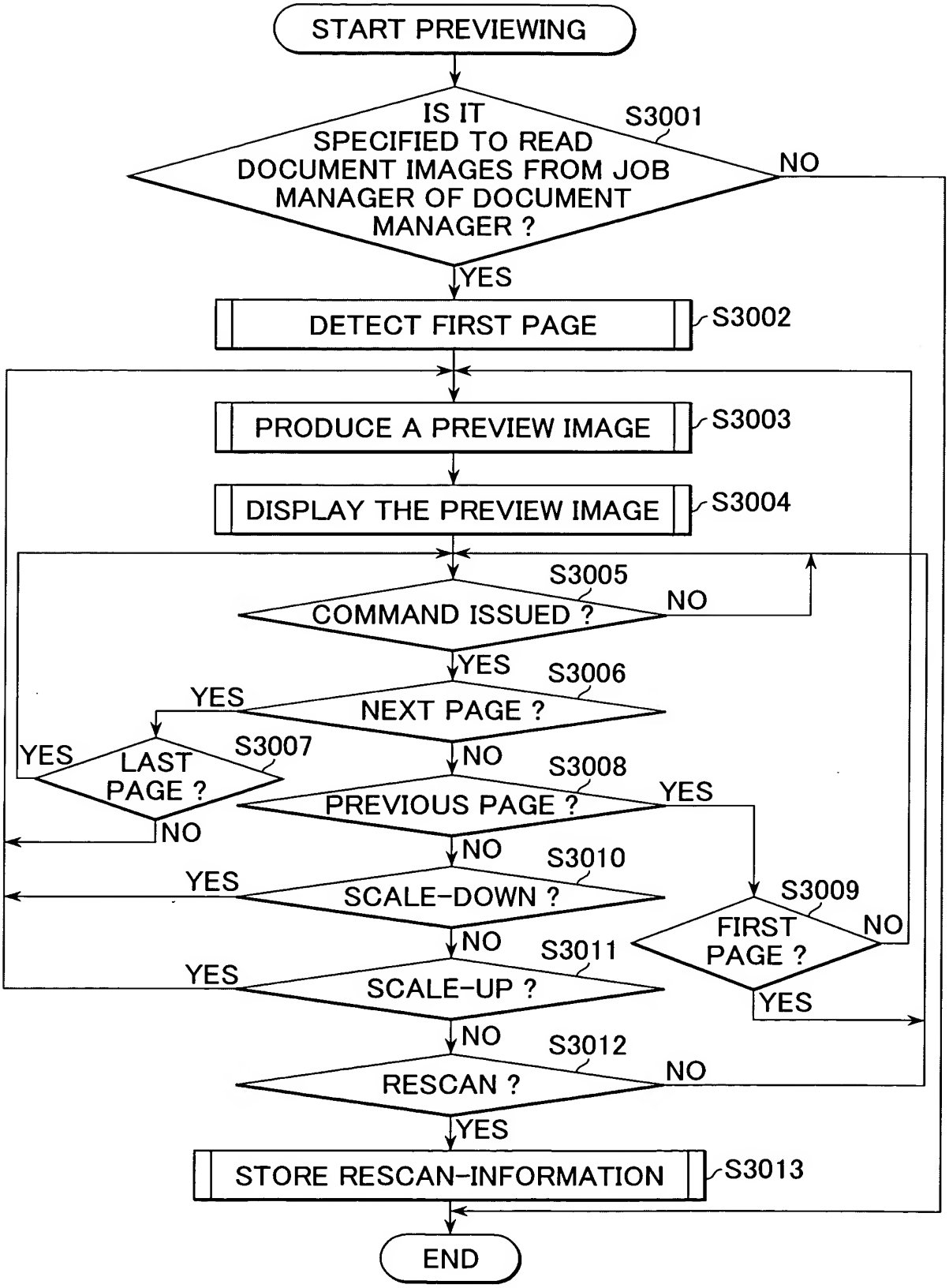

START PREVIEWING
IS IT SPECIFIED TO READ DOCUMENT IMAGES FROM JOB MANAGER OF DOCUMENT MANAGER ?
S3001
NO
YES
DETECT FIRST PAGE
S3002
PRODUCE A PREVIEW IMAGE
S3003
DISPLAY THE PREVIEW IMAGE
S3004
S3005
COMMAND ISSUED ?
NO
YES
S3006
NEXT PAGE ?
YES
YES
LAST PAGE ?
S3007
NO
NO
S3008
PREVIOUS PAGE ?
YES
NO
S3010
SCALE-DOWN ?
YES
S3009
FIRST PAGE ?
NO
NO
S3011
SCALE-UP ?
YES
YES
NO
S3012
RESCAN ?
NO
YES
STORE RESCAN-INFORMATION
S3013
END

FIG. 11

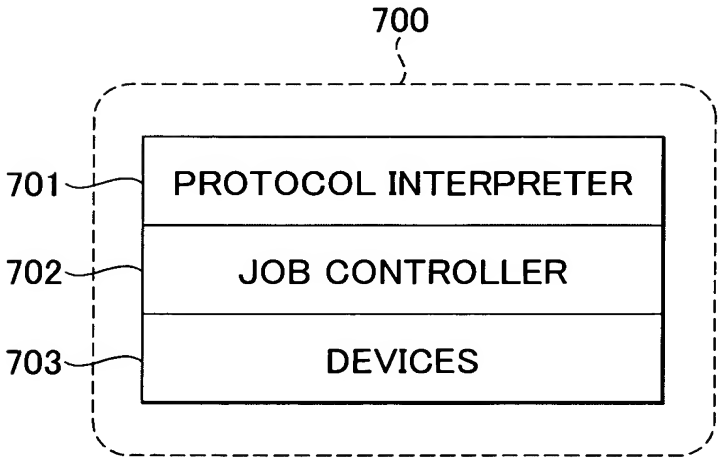

700
701
PROTOCOL INTERPRETER
702
JOB CONTROLLER
703
DEVICES

FIG. 12

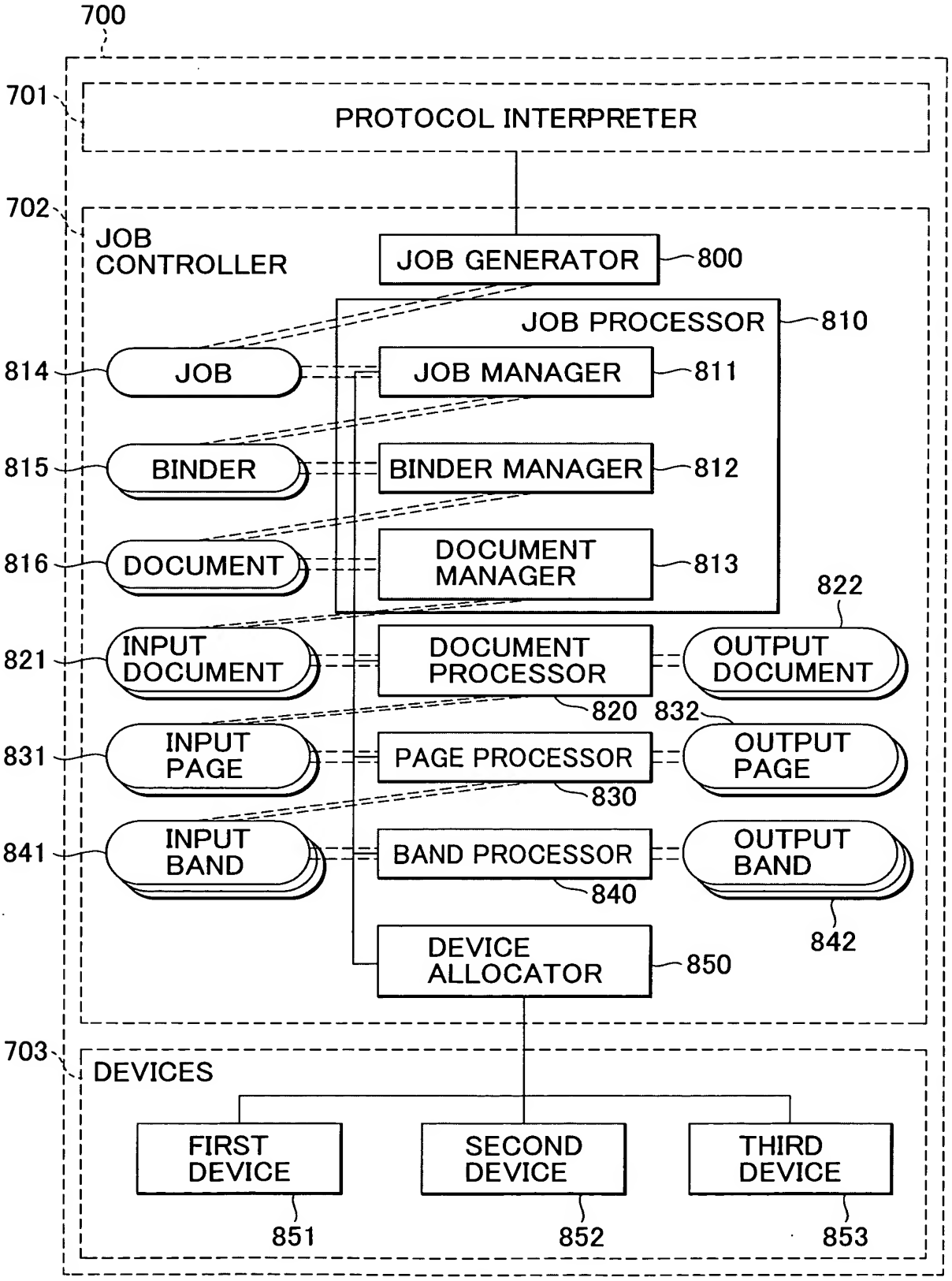

700
701
PROTOCOL INTERPRETER
702
JOB CONTROLLER
JOB GENERATOR
800
JOB PROCESSOR
810
814
JOB
JOB MANAGER
811
815
BINDER
BINDER MANAGER
812
816
DOCUMENT
DOCUMENT MANAGER
813
822
821
INPUT DOCUMENT
DOCUMENT PROCESSOR
OUTPUT DOCUMENT
820
832
831
INPUT PAGE
PAGE PROCESSOR
OUTPUT PAGE
830
841
INPUT BAND
BAND PROCESSOR
OUTPUT BAND
840
842
DEVICE ALLOCATOR
850
703
DEVICES
FIRST DEVICE
SECOND DEVICE
THIRD DEVICE
851
852
853

FIG. 13

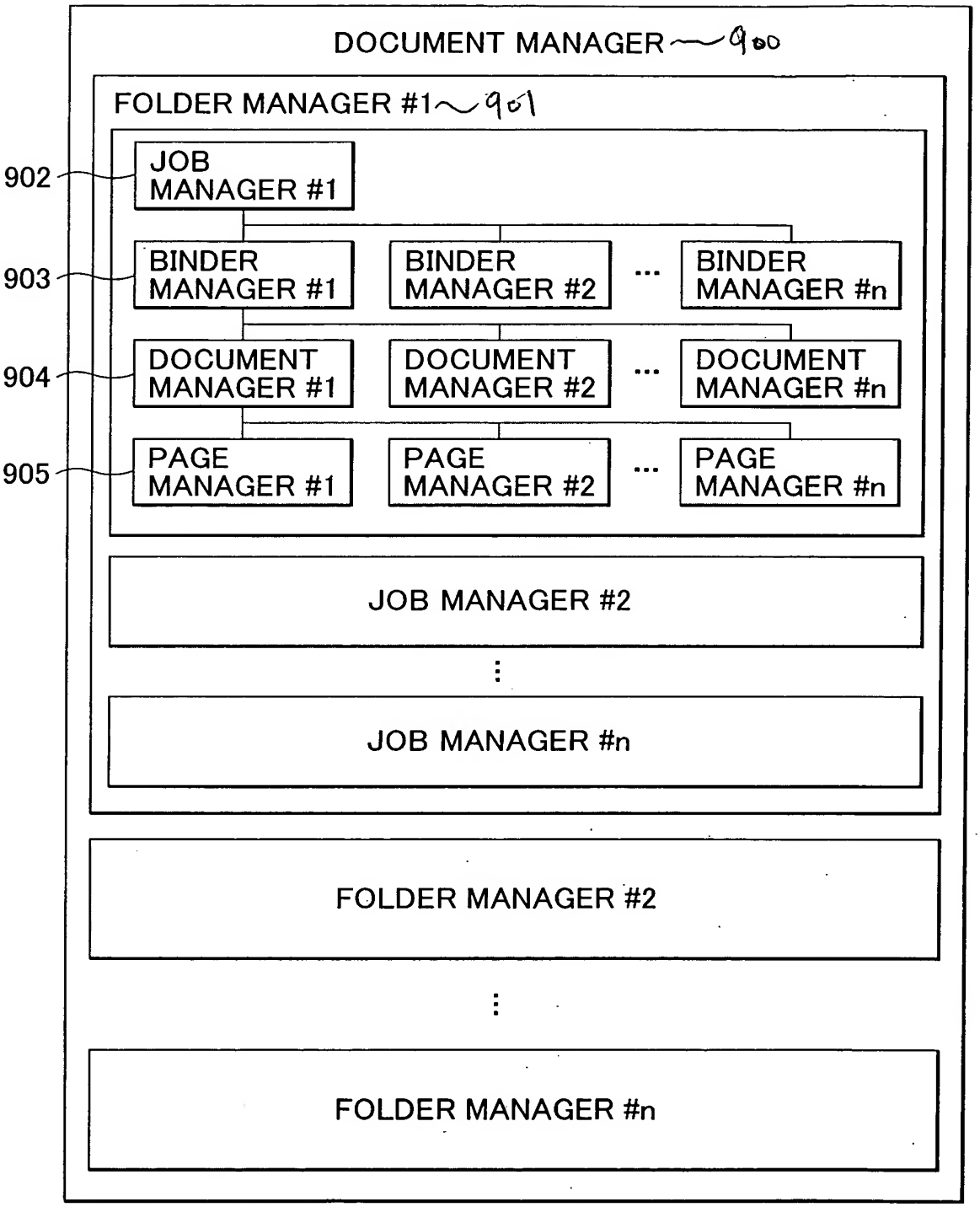

DOCUMENT MANAGER 900
FOLDER MANAGER #1 901
902
JOB MANAGER #1
903
BINDER MANAGER #1
BINDER MANAGER #2
...
BINDER MANAGER #n
904
DOCUMENT MANAGER #1
DOCUMENT MANAGER #2
...
DOCUMENT MANAGER #n
905
PAGE MANAGER #1
PAGE MANAGER #2
...
PAGE MANAGER #n
JOB MANAGER #2
JOB MANAGER #n
FOLDER MANAGER #2
FOLDER MANAGER #n

FIG. 14

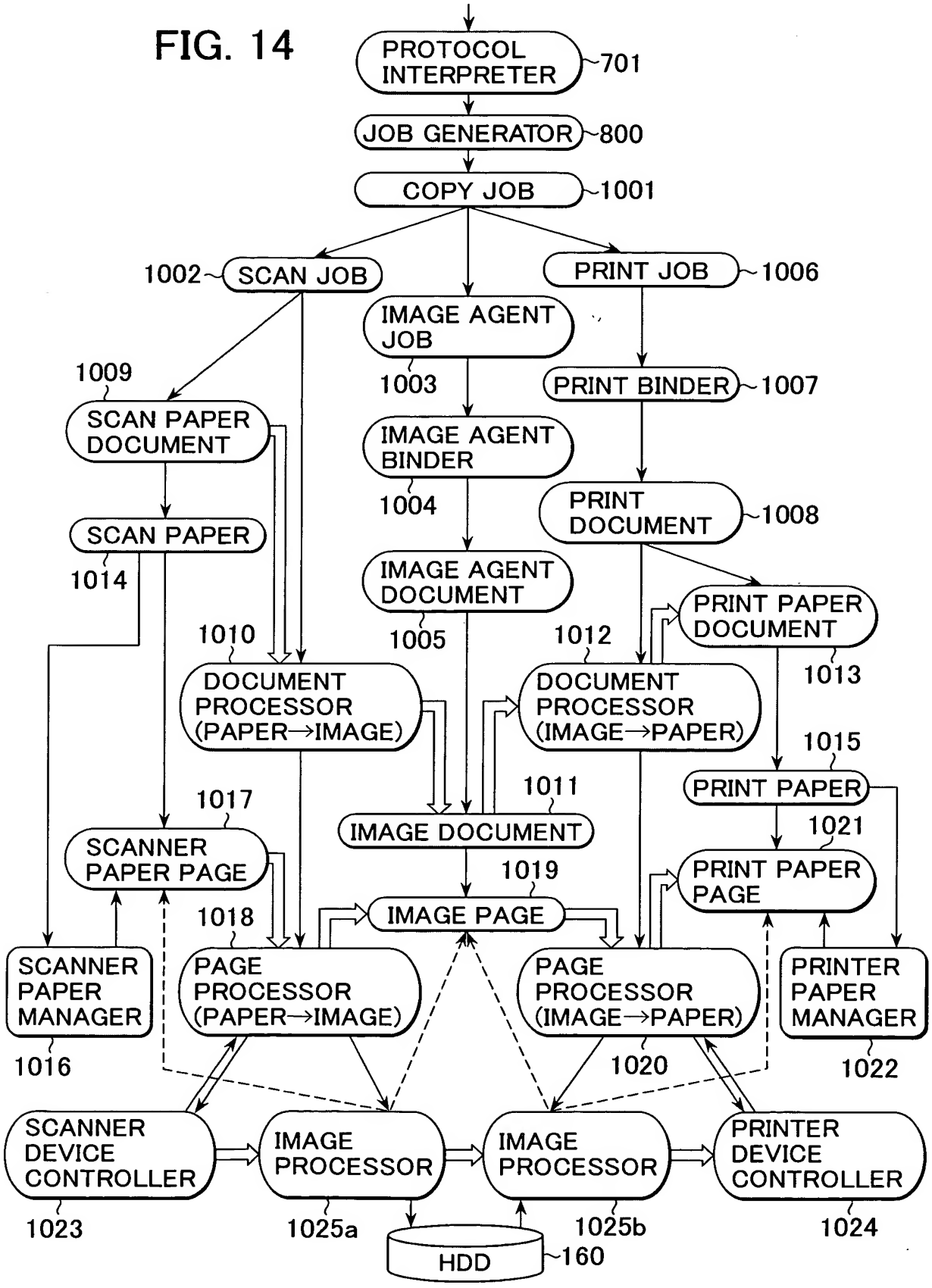

PROTOCOL INTERPRETER
701
JOB GENERATOR
800
COPY JOB
1001
1002
SCAN JOB
PRINT JOB
1006
IMAGE AGENT JOB
1003
PRINT BINDER
1007
1009
SCAN PAPER DOCUMENT
IMAGE AGENT BINDER
1004
PRINT DOCUMENT
1008
SCAN PAPER
1014
IMAGE AGENT DOCUMENT
1005
PRINT PAPER DOCUMENT
1013
1010
1012
DOCUMENT PROCESSOR (PAPER→IMAGE)
DOCUMENT PROCESSOR (IMAGE→PAPER)
1015
1017
1011
PRINT PAPER
IMAGE DOCUMENT
1021
SCANNER PAPER PAGE
1019
PRINT PAPER PAGE
1018
IMAGE PAGE
SCANNER PAPER MANAGER
PAGE PROCESSOR (PAPER→IMAGE)
PAGE PROCESSOR (IMAGE→PAPER)
PRINTER PAPER MANAGER
1016
1020
1022
SCANNER DEVICE CONTROLLER
IMAGE PROCESSOR
IMAGE PROCESSOR
PRINTER DEVICE CONTROLLER
1023
1025a
1025b
1024
HDD
160

FIG. 15

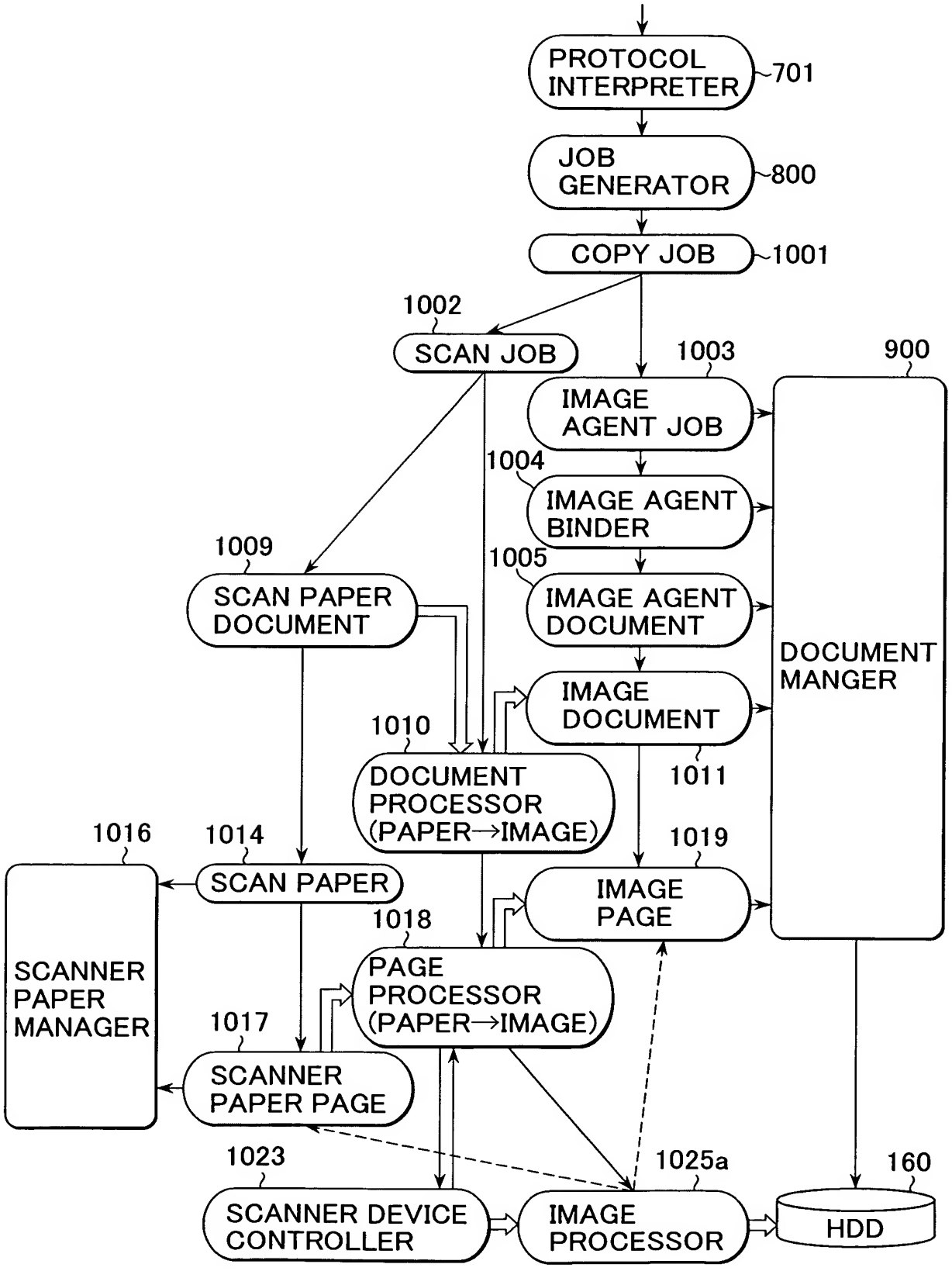

PROTOCOL INTERPRETER
701
JOB GENERATOR
800
COPY JOB
1001
1002
SCAN JOB
1003
IMAGE AGENT JOB
900
DOCUMENT MANGER
1004
IMAGE AGENT BINDER
1005
IMAGE AGENT DOCUMENT
1009
SCAN PAPER DOCUMENT
IMAGE DOCUMENT
1010
DOCUMENT PROCESSOR (PAPER→IMAGE)
1011
1016
1014
SCAN PAPER
1019
IMAGE PAGE
SCANNER PAPER MANAGER
1018
PAGE PROCESSOR (PAPER→IMAGE)
1017
SCANNER PAPER PAGE
1023
1025a
160
SCANNER DEVICE CONTROLLER
IMAGE PROCESSOR
HDD

FIG. 16

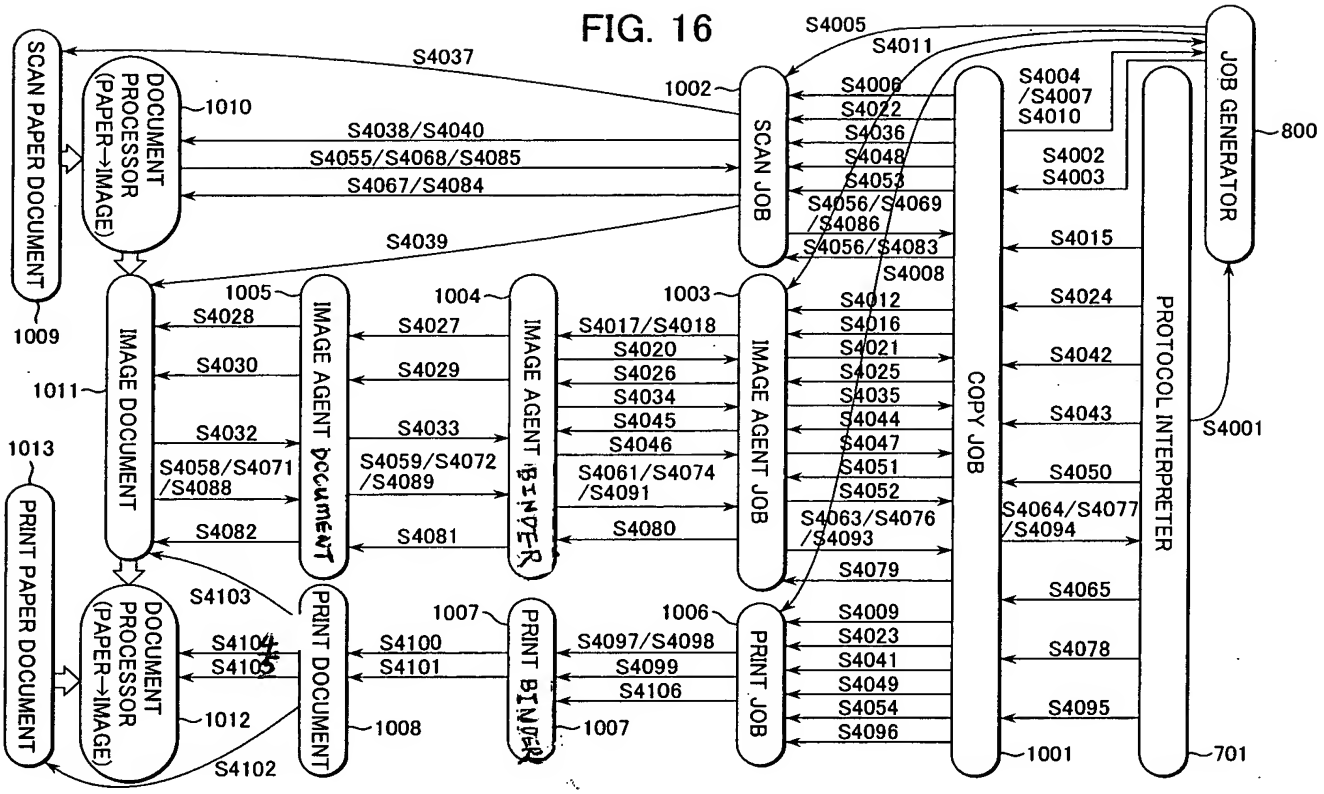

SCAN PAPER DOCUMENT
1009
DOCUMENT PROCESSOR (PAPER→IMAGE)
1010
IMAGE DOCUMENT
1011
PRINT PAPER DOCUMENT
1013
DOCUMENT PROCESSOR (PAPER→IMAGE)
1012
IMAGE AGENT document
1005
PRINT DOCUMENT
1008
IMAGE AGENT BINDER
1004
PRINT BINDER
1007
SCAN JOB
1002
IMAGE AGENT JOB
1003
PRINT JOB
1006
COPY JOB
1001
PROTOCOL INTERPRETER
701
JOB GENERATOR
800
S4001
S4037
S4038/S4040
S4055/S4068/S4085
S4067/S4084
S4039
S4028
S4030
S4032
S4058/S4071 /S4088
S4082
S4103
S4104
S4105
S4102
S4027
S4029
S4033
S4059/S4072 /S4089
S4081
S4100
S4101
S4017/S4018
S4020
S4026
S4034
S4045
S4046
S4061/S4074 /S4091
S4080
S4097/S4098
S4099
S4106
S4005
S4011
S4006
S4022
S4036
S4048
S4053
S4056/S4069 /S4086
S4056/S4083
S4008
S4012
S4016
S4021
S4025
S4035
S4044
S4047
S4051
S4052
S4063/S4076 /S4093
S4079
S4009
S4023
S4041
S4049
S4054
S4096
S4004 /S4007 S4010
S4002 S4003
S4015
S4024
S4042
S4043
S4050
S4064/S4077 /S4094
S4065
S4078
S4095

FIG. 17

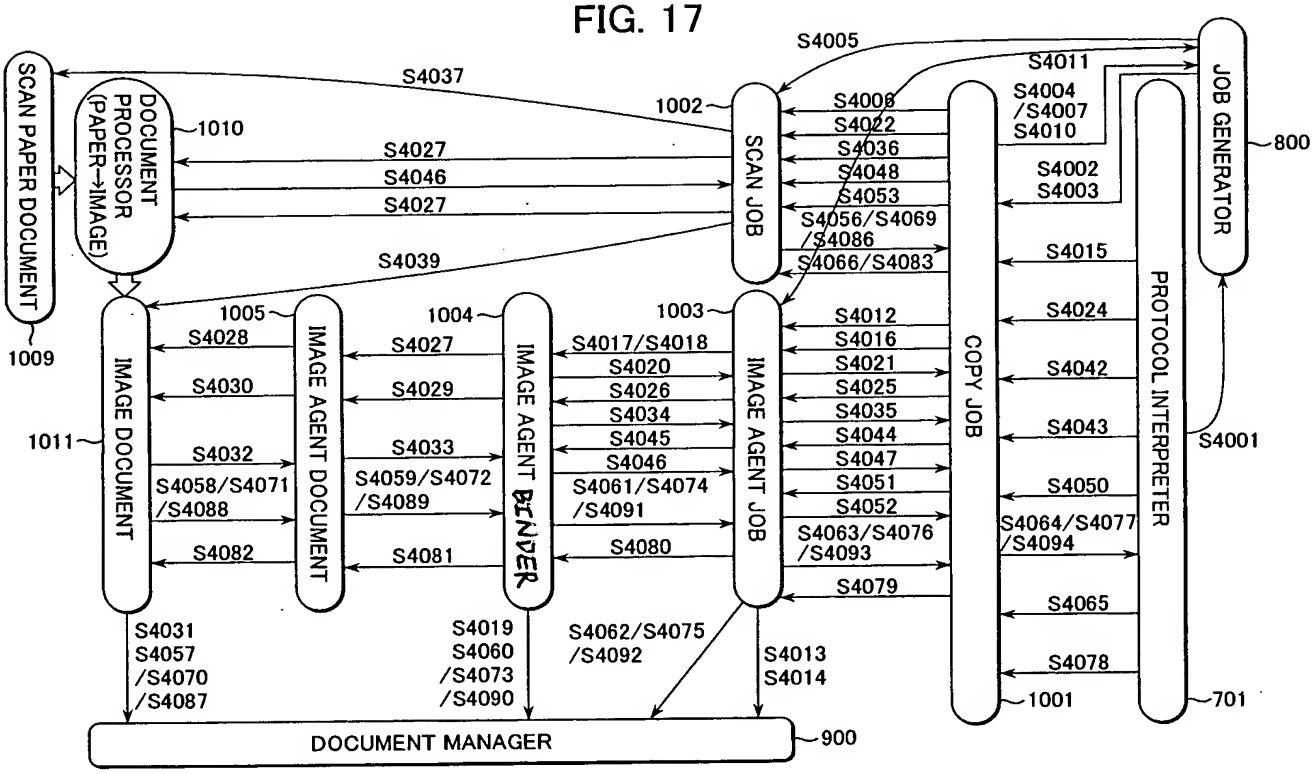
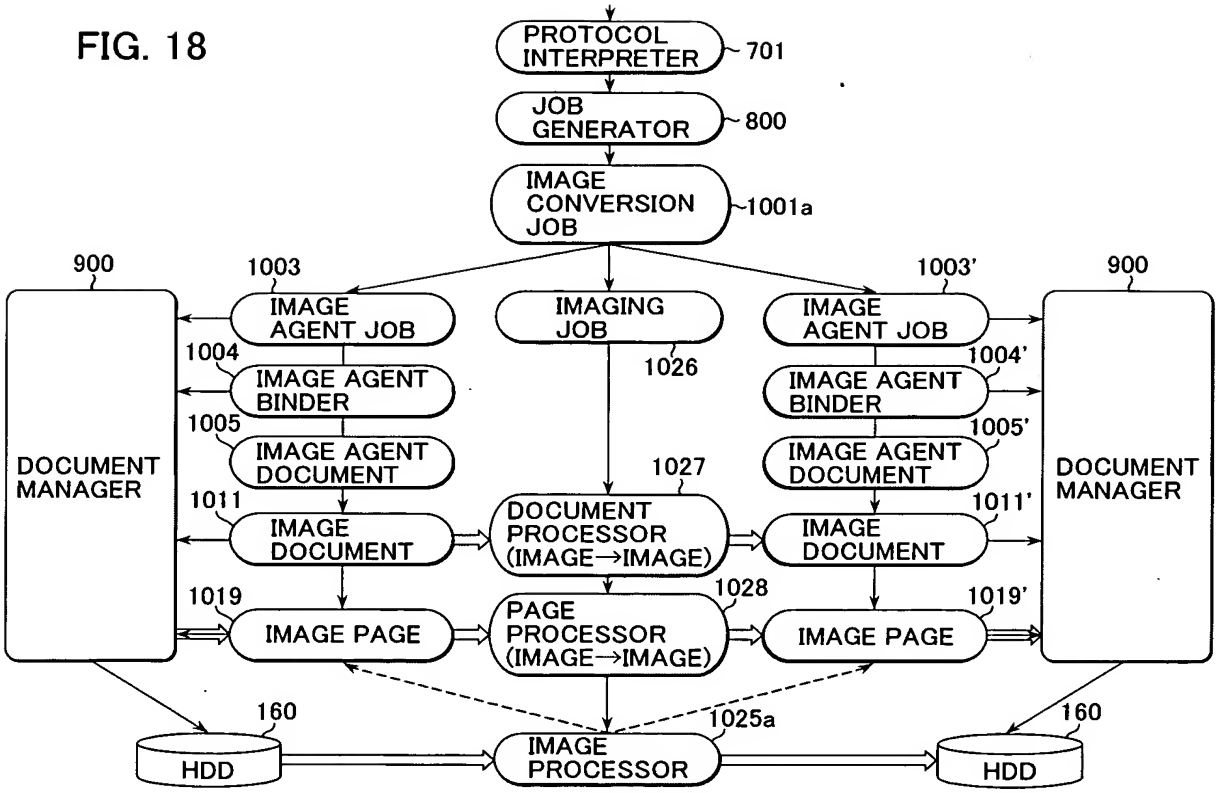

SCAN PAPER DOCUMENT
1009
DOCUMENT PROCESSOR (PAPER→IMAGE)
1010
IMAGE DOCUMENT
1011
IMAGE AGENT DOCUMENT
1005
IMAGE AGENT BINDER
1004
IMAGE AGENT JOB
1003
SCAN JOB
1002
COPY JOB
1001
PROTOCOL INTERPRETER
701
JOB GENERATOR
800
S4001
DOCUMENT MANAGER
900
S4037
S4039
S4027
S4046
S4027
S4028
S4030
S4032
S4058/S4071 /S4088
S4082
S4031 S4057 /S4070 /S4087
S4027
S4029
S4033
S4059/S4072 /S4089
S4081
S4017/S4018
S4020
S4026
S4034
S4045
S4046
S4061/S4074 /S4091
S4080
S4019 S4060 /S4073 /S4090
S4062/S4075 /S4092
S4005
S4006
S4022
S4036
S4048
S4053
S4056/S4069 /S4086
S4066/S4083
S4012
S4016
S4021
S4025
S4035
S4044
S4047
S4051
S4052
S4063/S4076 /S4093
S4079
S4013 S4014
S4011
S4004 /S4007 S4010
S4002 S4003
S4015
S4024
S4042
S4043
S4050
S4064/S4077 /S4094
S4065
S4078

FIG. 18


PROTOCOL INTERPRETER
701
JOB GENERATOR
800
IMAGE CONVERSION JOB
1001a
900
1003
1003'
900
IMAGE AGENT JOB
IMAGING JOB
IMAGE AGENT JOB
1004
1026
1004'
IMAGE AGENT BINDER
IMAGE AGENT BINDER
1005
1005'
IMAGE AGENT DOCUMENT
1027
IMAGE AGENT DOCUMENT
DOCUMENT MANAGER
1011
1011'
DOCUMENT MANAGER
IMAGE DOCUMENT
DOCUMENT PROCESSOR (IMAGE→IMAGE)
IMAGE DOCUMENT
1019
1028
1019'
IMAGE PAGE
PAGE PROCESSOR (IMAGE→IMAGE)
IMAGE PAGE
160
1025a
160
HDD
IMAGE PROCESSOR
HDD

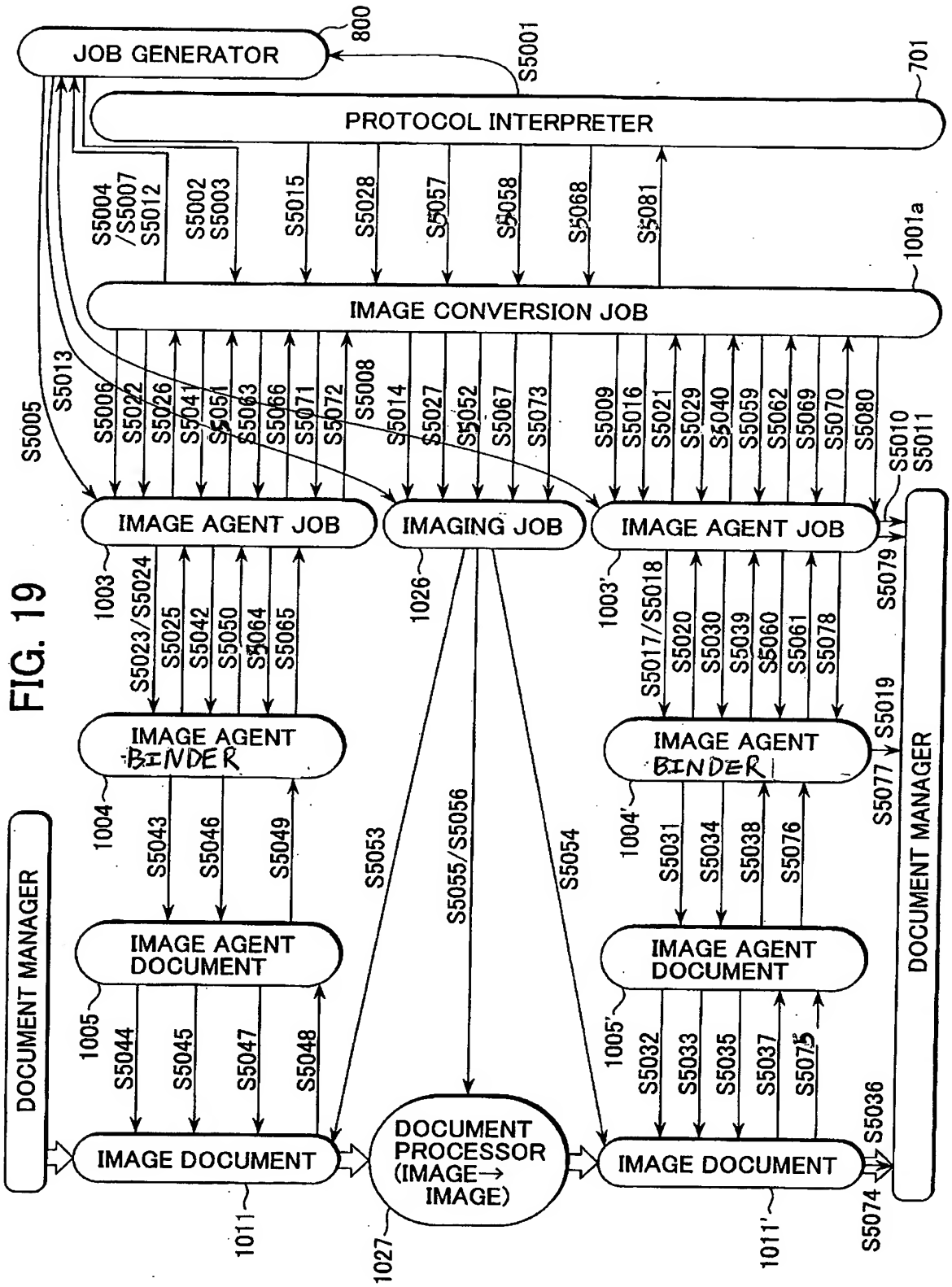
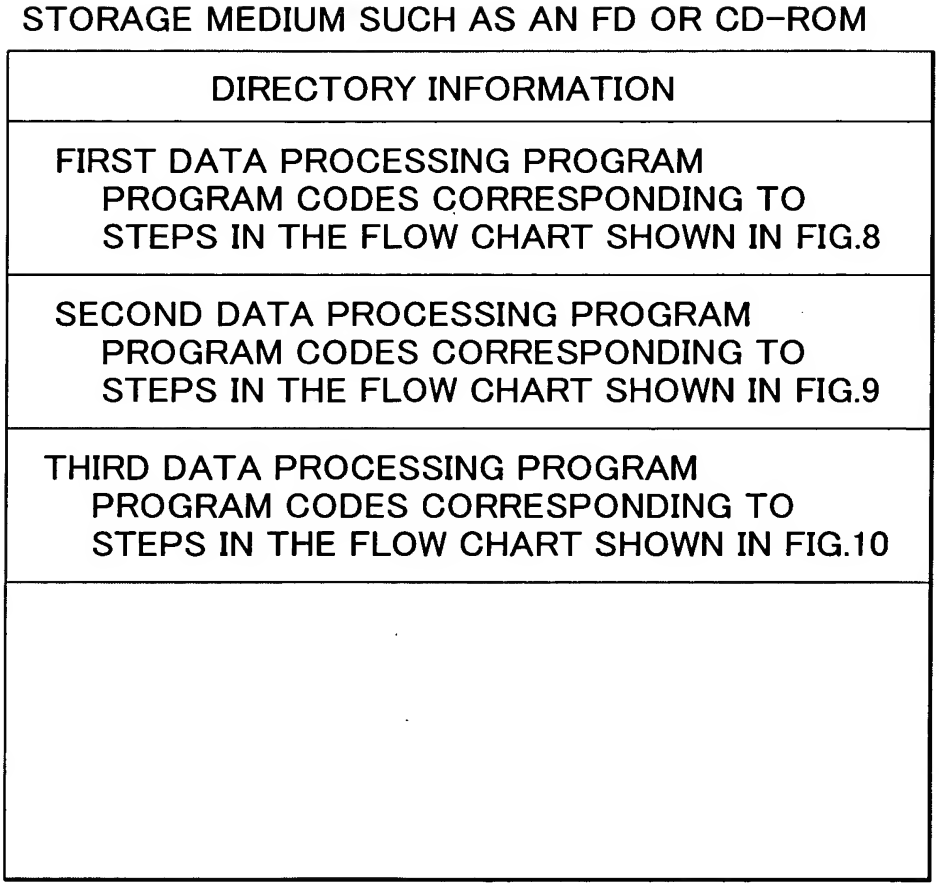

JOB GENERATOR
800
S5001
701
PROTOCOL INTERPRETER
S5004 /S5007 S5012
S5002 S5003
S5015
S5028
S5057
S5058
S5068
S5081
1001a
IMAGE CONVERSION JOB
S5013
S5005
S5006 S5022 S5026 S5041 S5051 S5063 S5066 S5071 S5072 S5008
S5014 S5027 S5052 S5067 S5073
S5009 S5016 S5021 S5029 S5040 S5059 S5062 S5069 S5070 S5080
S5010 S5011
IMAGE AGENT JOB
IMAGING JOB
IMAGE AGENT JOB
1003
1026
1003'
S5023/S5024 S5025 S5042 S5050 S5064 S5065
S5017/S5018 S5020 S5030 S5039 S5060 S5061 S5078
S5079
IMAGE AGENT BINDER
IMAGE AGENT BINDER
S5019
S5077
1004
1004'
S5043 S5046 S5049
S5031 S5034 S5038 S5076
S5053
S5055/S5056
S5054
DOCUMENT MANAGER
IMAGE AGENT DOCUMENT
IMAGE AGENT DOCUMENT
DOCUMENT MANAGER
1005
1005'
S5044 S5045 S5047 S5048
S5032 S5033 S5035 S5037 S5075
S5036
IMAGE DOCUMENT
DOCUMENT PROCESSOR (IMAGE→ IMAGE)
IMAGE DOCUMENT
1011
1027
1011'
S5074

FIG. 19

FIG. 20


STORAGE MEDIUM SUCH AS AN FD OR CD-ROM
DIRECTORY INFORMATION
FIRST DATA PROCESSING PROGRAM
PROGRAM CODES CORRESPONDING TO
STEPS IN THE FLOW CHART SHOWN IN FIG.8
SECOND DATA PROCESSING PROGRAM
PROGRAM CODES CORRESPONDING TO
STEPS IN THE FLOW CHART SHOWN IN FIG.9
THIRD DATA PROCESSING PROGRAM
PROGRAM CODES CORRESPONDING TO
STEPS IN THE FLOW CHART SHOWN IN FIG.10
MEMORY MAP OF STORAGE MEDIUM